(D) REMARKS

Reconsideration is respectfully requested in view of the above amendments and the following remarks. Claims 1-3 and 5-12 are pending. Claim 5 has been withdrawn from consideration as being directed to a non-elected invention. Claims 11 and 12 have been added hereby.

1. The Official Action acknowledged and made final Applicants' election with traverse to prosecute the invention of Group I (claims 1-3 and 6-10) and Applicants' election of the species for W: heparin/heparan sulfate or a partially desulfated modification thereof, which was selected from the group recited in claim 3. The Examiner is reminded that claims 1 and 7 are generic to all species. It is noted that when claims to nonelected species are fully embraced by allowable generic claims, the claims shall no longer be withdrawn. MPEP 809.02. Upon the allowance of claims 1 and 7, all claims that depend therefrom should be in condition for allowance, including claims 3, 9 and 10 which feature the non-elected species. It is submitted that claim 5 which features the non-elected invention of Group II, should also be in condition for allowance upon the allowance of claim 1, because claim 5 includes all features of claim 1.

2. It is respectfully submitted that the amendment herein to the specification, making the change from "Claims" to "What is claimed is," overcomes the objection to the disclosure.

3. Claims 1-3 and 6-10 were rejected under 35 U.S.C. §102 on the grounds that they are anticipated by Tay et al. (Biomaterials, 1989, vol. 10(1), pp. 11-15) and Larsson et al. (WO 93/05793). Because this is an anticipation rejection, it is assumed the claims are rejected over either reference, not both.

The claimed invention features, *inter alia*, a functional polymer characterized by having a structure represented by the following formula (I):

-(CWX-CYZ)n- (I),

where "W" denotes a carbohydrate chain including a structure corresponding to at least a portion of the basic skeletal structure of a glycosaminoglycan and comprising 2-50 constituent disaccharide units having an average of at least one sulfate group (claims 1 and 7).

In addition, independent claim 7 features an agent for preventing reconstriction of a blood vessel comprising the inventive functionalized polymer.

The carbohydrate chain W of the present invention is a glycosaminoglycan comprising 2 to 50 constituent disaccharide units. When heparin, for example, is the carbohydrate chain of the claimed invention, it is shorter and of lower molecular weight than natural or full length heparin. Moreover, the functional polymer of the claimed invention (claims 1 and 7) has the repeating monomeric unit: CWX-CYZ. The carbohydrate chain "W" is present on every monomer unit in the claimed invention.

Under an anticipation rejection pursuant to 35 U.S.C. §102, every feature of the claimed invention must be disclosed in a single prior art reference. If a feature is inherently disclosed by a reference, it must necessarily be present as a result of following the disclosure of the reference. Neither Tay nor Larsson expressly or inherently discloses all of the features of claims 1 or 7, as discussed below.

Tay does not disclose a carbohydrate chain W in each monomeric unit as in the claimed invention, nor would this necessarily be present from following the disclosure of Tay. Instead, Tay couples heparin to OH groups of cross-linked PVA or PEO. Bonding heparin at various locations along the hydrogel in Tay would not necessarily result in a heparin molecule in each monomeric unit. This is evident from the fact that Tay activates OH's using tresylchloride, some of which were unreacted (page 13, left column, lines 28-60). This resulted in unactivated OH's, which Tay would not expect to bind to heparin.

Moreover, Tay does not expressly disclose the claimed feature that carbohydrate chain W includes a structure corresponding to at least a portion of the basic structure of a glycosaminoglycan and comprising 2-50 constituent disaccharide units having an average of at least one sulfate group. Because Tay does not expressly or inherently disclose all of the features of claims 1 and 7, this reference does not anticipate the claims. Accordingly, for the above reasons withdrawal of this rejection in view of Tay is respectfully requested.

Larsson does not expressly disclose a carbohydrate chain W contained in each monomeric unit as in the claimed invention, nor would such a carbohydrate chain necessarily be present from following the disclosure of the Larsson reference. Larsson discloses a polymer having functional groups distributed along the backbone so as to bond at least 20 glycosoaminoglycan units to the backbone. Having various bound glycosaminoglycan molecules distributed along the backbone does not necessarily result in a glycosaminoglycan in each monomeric unit. Because Larsson does not expressly or inherently disclose all of the features of claims 1 and 7, this reference does not anticipate the claims. Accordingly, for the above reasons withdrawal of this rejection in view of Larsson is respectfully requested.

Claims 2, 3, 5 and 6 depend from claim 1 and thus, are patentably distinguished from Tay and Larsson for the same reasons as claim 1. Claims 8-10 depend from claim 7 and thus, are patentably distinguished from Tay and Larsson for the same reasons as claim 7. In particular, claims 2 and 8 feature a carbohydrate chain obtained by chemical decomposition of a natural glycosaminoglycan and that the decomposed carbohydrate chain is bonded to the polymer main chain via a functional group formed by the chemical decomposition. With regard to these claims, the Office Action states that reference to how the carbohydrate chain is obtained is not given patentable weight. However, it is submitted that patentable weight must be given to the claimed carbohydrate chain obtained by chemical decomposition of a natural glycosaminoglycan, at least as to the identity of the functional group formed by the

decomposition and its bond to the polymer main chain. The features of claims 2 and 8 are not disclosed by Tay or Larsson.

Claim 6 features a cell growth control agent characterized by containing the functionalized polymer of claim 1. The combined features of claim 6 are not disclosed by Tay or Larsson.

Claim 10 depends from claims 7 and 8 and thus, is patentably distinguished from the applied references for the same reasons discussed with regard to claims 7 and 8, further in view of the particular glycosaminoglycans recited in claim 10.

4. Claims 11 and 12 have been added hereby. In Claim 11, which depends from claim 1, the polymer main chain is a vinyl polymer. As discussed above, Tay and Larsson do not disclose all of the features of claim 1 and thus, fail to disclose the features of claim 11, for the same reasons as claim 1. Moreover, Larsson does not disclose the claimed functionalized polymer wherein the polymer main chain is a vinyl polymer, as evident from the following passage (page 8, lines 16-19):

> Preferably, however, the polymer chain is a natural or synthetic polypeptide, polysaccharide or aliphatic polymer. As specific examples may be mentioned polylysine, polyornithine, chitosan, polyimine and polyallylamine.

Therefore, it is respectfully submitted that claim 11 is patentably distinguished from Tay and Larsson.

In claim 12, which depends from claims 1 and 11, the polymer main chain is hydrophobic and the carbohydrate chain is hydrophilic. It is respectfully submitted that the invention of claim 12 is patentably distinguished from Tay and Larsson for the same reasons as claims 1 and 11, and further in view of the added features recited in claim 12.

It is respectfully submitted that the foregoing amendments, taken in conjunction with the above remarks, place all pending claims of this application in condition for allowance. Accordingly, an early Notice of Allowance in this application is respectfully solicited. The Examiner is invited to contact the undersigned by telephone to expedite the prosecution of this application.

Dated: December 22, 2003

Respectfully submitted,

Paul A. Serbinowski
Reg. No. 34,429